



January 25, 2006

Mr. J. Robert Brown
Engineering Services Division
Bureau of Air Quality
2600 Bull Street
Columbia, South Carolina 29201

Re: Bowater Coated and Specialty Papers Division
PSD Permit Application for Kraft Fiberline Optimization
Lime Kiln BACT for Particulate Matter Additional Information
Permit No. 2440-0005

Dear Mr. Brown:

Bowater Coated and Specialty Papers Division (Bowater) has prepared the attached additional BACT/LAER information for particulate matter from the lime kiln.

Particulate Matter

No. 2 Lime Kiln

In order to achieve an emission limit of 0.01 gr/dscf after the modification, a new ESP would be required. The cost for a new ESP has been estimated using the EPA approved Air Compliance Advisor (ACA) software.

The cost of installing the third field in the existing ESP is approximately \$500,000. Since the annual operating costs for the new ESP and adding a third field to the existing ESP are anticipated to be very similar, the values generated by ACA have also been utilized for calculations involving the additional third field to the existing ESP.

The cost-effectiveness was determined by dividing the annualized cost by emissions reduction in tons per year for the control option. The cost estimates and cost-effectiveness information are included below.

**ESP COST ANALYSIS
No. 2 LIME KILN
BOWATER
CATAWBA, SOUTH CAROLINA**

Cost Item	Computation Method	Cost (Dollars) ESP Third Field (0.02 gr/dscf)	Cost (Dollars) New ESP (0.01 gr/dscf)
Direct Costs			
Purchased Equipment:			
Total Basic Equipment (A)	ACA Model (new ESP) or Vendor (Third Field)	\$137,700	\$2,739,744
Purchased Equipment Cost (B)	ACA Model (new ESP) or Vendor (Third Field)	\$152,700	\$3,232,898
Direct Installation Costs (DIC)	ACA Model (new ESP) or Vendor (Third Field)	\$0	\$2,166,042
Total Direct Costs (DC)	ACA Model (new ESP) or Vendor (Third Field)	\$152,700	\$5,398,940
Indirect Costs (IC)	ACA Model (new ESP) or Vendor (Third Field)	\$347,300	\$1,842,752
TOTAL CAPITAL INVESTMENT (TCI)		\$500,000	\$7,241,693
Cost Item	Computation Method	Cost (Dollars) ESP Third Field (0.02 gr/dscf)	Cost (Dollars) New ESP (0.01 gr/dscf)
Direct Operating Costs			
Operator Labor	ACA Model (assumed same operator)	\$21,255	\$21,255
Supervisory Labor	ACA Model (assumed same supervisor)	\$10,273	\$10,273
Coordinator Labor		\$0	\$0
Operating Materials	As Required		
Maintenance (general)			
Labor	ACA Model (assumed same labor)	\$22,544	\$22,544
Materials	ACA Model (assumed same materials)	\$32,329	\$32,329
Replacement Parts	ACA Model (assumed same parts)	\$0	\$0
Electricity	ACA Model (assumed same electricity)	\$225,701	\$225,701
Utilities	ACA Model (assumed same utilities)	\$225,701	\$225,701
TOTAL DIRECT COSTS (A)		\$312,104	\$312,104
Cost Item	Computation Method	Cost (Dollars) ESP Third Field (0.02 gr/dscf)	Cost (Dollars) New ESP (0.01 gr/dscf)
Indirect Operating Costs			
Overhead	ACA Model (60% of O/M labor/materials cost)	\$51,841	\$51,841
Property Tax	ACA Model (1% of TCI)	\$5,000	\$72,417
Insurance	ACA Model (1% of TCI)	\$5,000	\$72,417
Administration	ACA Model (2% of TCI)	\$10,000	\$144,834
Capital Recovery	ACA Model capital recovery factor (CRF)	0.11746	0.11746
	ACA Model (TCI x CRF)	\$58,730	\$850,606
TOTAL FIXED COSTS (B)		\$130,571	\$1,192,116
TOTAL ANNUALIZED COSTS (D) = [A] + [B]		<u>\$442,675</u>	<u>\$1,504,220</u>

**EVALUATION OF CONTROL COST IMPACTS FOR LIME KILN ESP
BOWATER
CATAWBA, SOUTH CAROLINA**

Control System	PM Loading (tpy)	PM Outlet (tpy)	Percent Reduction	PM Emissions Reduction (tpy)	PM Emissions Change (tpy)	Economic Impacts		
						Total Annualized Cost \$/yr	Difference between existing and modified ESP	
							\$/yr	\$/ton
Existing ESP (0.03 gr/dscf)	74,591	90	99.88%	74,501	0.0	0	N/A	N/A
Modified ESP (0.02 gr/dscf)	74,591	60	99.92%	74,531	30.0	442,675	442,675	14,756
New ESP (0.01 gr/dscf)	74,591	30	99.96%	74,561	60.0	1,504,220	1,504,220	25,070

The annualized cost of installing a new ESP to meet the new source MACT limit of 0.01 gr/dscf is over \$1,500,000 per year. The new ESP would reduce emissions from the current limit of 0.03 gr/dscf (90 tpy) down to 0.01 gr/dscf (30 tpy), a reduction of 60 tons per year. Therefore, the cost effectiveness of installing a new ESP is over \$25,000 per ton of particulate reduced, and is not considered cost effective.

The annualized cost of installing a third field in the existing ESP to meet a limit of 0.02 gr/dscf is more than \$400,000 per year. The third field would reduce emissions from the current limit of 0.03 gr/dscf (90 tpy) down to 0.02 gr/dscf (60 tpy), a reduction of 30 tons per year. Therefore, the cost effectiveness of installing a third field in the existing ESP is over \$14,000 per ton of particulate reduced, and is not considered cost effective. Although this value is not considered cost effective, installing the third field was necessary to ensure continued compliance with the current emission limit of 0.03 gr/dscf.

If you have additional questions regarding this submittal please contact Jacquelyn Taylor of Bowater at (864) 981-8759, or me at (864) 527-4734.

Sincerely,

Steven R. Moore
URS Corporation

cc: Jacquelyn Taylor – Bowater

